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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,412	01/12/2002	Clark Hu	67,200-655	6396

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EXAMINER

STAFIRA, MICHAEL PATRICK

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 10/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/045,412

Applicant(s)

HU ET AL.

Examiner

Michael P. Stafira

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AW

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8-11 and 14-20 is/are rejected.
- 7) ☒ Claim(s) 4-7, 12 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3,8-11,14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wei et al. ('689).

#### **Claim 1**

Wei et al. ('689) discloses one light source (Fig. 2, Ref. 102) that generates light reflected by the wafer (Fig. 2, Ref. 106) and one light detector (Fig. 2, Ref. 112) sensing a detected light value of the light reflected by the semiconductor wafer, where the detected light value deviating from the normal value corresponding to no wafer tilt indicates that the wafer has tilted (see Fig. 2; Col. 1, lines 48-58).

Wei et al. ('689) discloses the claimed invention except for one light detector. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Wei et al. ('689) with the one light detector since it was well known in the art that that one light detector provides a compact apparatus allowing the device to be placed in small areas.

#### **Claim 2**

The reference of Wei et al. ('689) further discloses a single light source (Fig. 2, Ref. 102).

#### **Claim 3**

Wei et al. ('689) further discloses the light detector is a pair of light detectors (Fig. 1, Ref. 112).

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**Claim 8**

Wei et al. ('689) discloses the claimed invention except for one light detector. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Wei et al. ('689) with the one light detector since it was well known in the art that that one light detector provides a compact apparatus allowing the device to be placed in small areas.

**Claim 9**

Wei et al. ('689) further discloses the one light source is a single light source (Fig. 2, Ref. 102).

**Claim 10**

The reference of Wei et al. ('689) further discloses the detected light value deviating from the normal value corresponding to no wafer tilt by more than a tolerance value indicates that the wafer has tilted (See Fig. 2, Col. 1, lines 48-58).

**Claim 11**

Wei et al. ('689) discloses a light source (Fig. 2, Ref. 102) generating light reflected by the semiconductor wafer (Fig. 2, Ref. 106) and a pair of light detectors each sensing a detected light value of the light reflected by the semiconductor wafer (Fig. 2, Ref. 112).

Wei et al. ('689) discloses the claimed invention except for a comparator to compare the detected light value sensed by each of the pair of light detectors as a wafer tilt value, where the wafer tilt value deviating from a normal value corresponding to no wafer tilt indicates that the wafer has tilted. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Wei et al. ('689) with a comparator since it was well known in the art that when one determines the deviation from the normal value one compares a reference value with a measured, therefore indicating the deviation and increasing the accuracy of the measurement.

**Claim 14**

The reference of Wei et al. ('689) further discloses the detected light value deviating from the normal value corresponding to no wafer tilt by more than a tolerance value indicates that the wafer has tilted (Col. 1, lines 48-58).

**Claim 15**

Wei et al. ('689) discloses the step of aiming one light beam (Fig. 2, Ref. 102) against a semiconductor wafer (Fig. 2, Ref. 106) for reflection by the semiconductor wafer and sensing the one light beam after reflection by the semiconductor wafer as corresponding one light values and determining that the wafer tilt of the semiconductor wafer has occurred where the one light values deviate from a normal value corresponding to no wafer tilt (Col. 1, lines 48-58).

**Claim 16**

The reference of Wei et al. ('689) further discloses the step of ensuring that the semiconductor wafer has not tilted and aiming the one light beam against the semiconductor wafer for reflection by the semiconductor wafer. Wei et al. ('689) further discloses the step of sensing the one light beam after reflection by the semiconductor wafer as the normal value (Col. 1, lines 48-58).

**Claim 17**

Wei et al. ('689) discloses the step of determining that the wafer tilt of the semiconductor wafer has occurred where the one light values deviate from the normal value corresponding to no wafer tilt while determining that wafer tilt of the semiconductor wafer has occurred where each of at least one of the light values deviate from the corresponding normal value for the light value (Col. 1, lines 48-58).

**Claim 18**

The reference of Wei et al. ('689) further discloses the step of comparing the one light value as an absolute difference and determining that wafer tilt of the semiconductor wafer has occurred where the absolute difference deviates from a normal absolute difference (Col. 1, lines 48-58).

**Claim 19**

Wei et al. ('689) discloses the step of determining that wafer tilt of the semiconductor wafer has occurred where the absolute difference deviates from the normal absolute difference by determining that wafer tilt of the semiconductor wafer has occurred where the absolute difference deviates from the normal absolute by more than a tolerance value (Col. 1, lines 48-58).

**Claim 20**

The reference of Wei et al. ('689) further discloses the step of determining that wafer tilt of the semiconductor wafer has occurred where the one light values deviate from the normal value corresponding to no wafer tilt comprises determining that the wafer tilt of the semiconductor wafer has occurred where the one light values deviate from the normal value by more than a tolerance value (Col. 1, lines 48-58).

***Allowable Subject Matter***

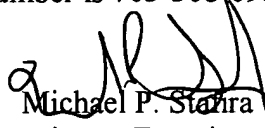
3. Claims 4-7,12,13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 703-308-4837. The examiner can normally be reached on 4/10.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 703-308-4881. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7721 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

  
Michael P. Stahra  
Primary Examiner  
Art Unit 2877

October 20, 2003